Patent Claims

1. Device for operating an oscillatable unit (1) of a vibration resonator, comprising a piezodrive (2), which is connected with the oscillatable unit (1), and a feedback electronics (3),
wherein the feedback electronics (3) excites the piezodrive (2) to oscillate by means of a periodic exciter signal (20) having rising and falling edges,
wherein a response signal (21) of the piezodrive (2) is fed back to the feedback electronics (3), and
at least one peak compensation unit (4), which removes from the response signal (21) at least one interference signal (22), which results from the charge-reversal process of the piezodrive (2),
characterized in that,
in the peak compensation unit (4), at least one suppression unit (5, 13), with at least one switch element (6, 14), is provided, with the switch element (6, 14) being controlled by the exciter signal (20) of the feedback electronics (3) in such a way, that the piezodrive (2) is connected conductively to ground during the rising and/or during the falling edges of the exciter signal (20).

2. Device as claimed in claim 1,
characterized in that
the response signal (21) is a current signal, and
wherein a current-to-voltage converter (7) is provided, which converts the current signal into a voltage signal.

3. Device as claimed in claim 1,
characterized in that
the current-to-voltage converter (7) is a resistor (11), which is connected to ground.

4. Device as claimed in claim 1,
characterized in that,
in the peak compensation unit (4), a resistor (19) is provided, which is dimensioned such that the time constant (t1) of the duration of the charge-reversal process of the piezodrive is minimized.

5. Device as claimed in claim 1,
characterized in that a first suppression unit (5) and a second suppression unit (13) are provided in the peak compensation unit (4),
wherein the first suppression unit (5) is controlled by the falling edges and the second suppression unit (13 by the rising edges of the exciter signal (20).

6. Device as claimed in claim 1,
characterized in that,
in the peak compensation unit (4), at least one differentiating element (12, 18) is provided, to which the exciter signal (20) is applied, and which controls the switch element (6, 14),
wherein the output voltage of the differentiating element (12, 18) represents the derivative of the exciter signal (20).

7. Device for operating an oscillatable unit (1) of a vibration resonator, comprising
a piezodrive (2), which is connected with the oscillatable unit (1), and a feedback electronics (3),
wherein the feedback electronics (3) excites the piezodrive (2) to oscillate by means of a periodic exciter signal (20) having rising and falling edges,
wherein a response signal (21) of the piezodrive (2) is fed back to the feedback electronics (3), and

at least one peak compensation unit (4), which removes from the response signal (21) at least one interference signal (22), which results from the charge-reversal process of the piezodrive (2),
characterized in that,
in the peak compensation unit (4), at least one amplifying unit (30) is provided, which amplifies the response signal (21) of the piezodrive (2), and whose amplification factor is controllable by the exciter signal (20) of the feedback electronics (3) in such a manner that the amplification factor is minimal during the rising and/or during the falling edges of the exciter signal (20).

8. Device as claimed in claim 7,
characterized in that
the amplifying unit (30) is a charge amplifier.

9. Device as claimed in claim 7 or 8,
characterized in that
the amplification factor is approximately zero during the rising and/or during the falling edges of the exciter signal (20).

10. Device as claimed in claim 7, 8 or 9,
characterized in that,
in the peak compensation unit (4), at least one switch element (6, 14) is provided, which controls the amplification factor of the amplifying unit (30), and,
in the peak compensation unit (4), at least one differentiating element (12, 18) is provided, on which the exciter signal (20) is applied and which controls the switch element (6, 14),
wherein the output voltage of the differentiating element (12, 18) represents the derivative of the exciter signal (20).

11. Device as claimed in claim 1 or 10,
characterized in that
the switch element (6, 14) is an electric component, which changes its conductivity as a function of an applied voltage.